UL 404

STANDARD FOR SAFETY

Gauges, Indicating Pressure, for Compressed Gas Service

UL Standard for Safety for Gauges, Indicating Pressure, for Compressed Gas Service, UL 404

Eighth Edition, Dated October 8, 2010

SUMMARY OF TOPICS

This revision of ANSI/UL 404 includes revisions to 7.2 and 10.1 to provide clarification and more details to explain the construction of pressure gauges.

The new and/or revised requirements are substantially in accordance with Proposal(s) on this subject dated December 12, 2014.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin. Changes in requirements are marked with a vertical line in the margin and are followed by an effective date note indicating the date of publication or the date on which the changed requirement becomes effective.

The requirements in this Standard are now in effect, except for those paragraphs, sections, tables, figures, and/or other elements of the Standard having future effective dates as indicated in the note following the affected item. The prior text for requirements that have been revised and that have a future effective date are located after the Standard, and are preceded by a ″SUPERSEDED REQUIREMENTS″ notice.

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1

UL 404

Standard for Gauges, Indicating Pressure, for Compressed Gas Service

The first and second editions were titled High-Pressure Gas Gauges and the first edition was numbered UL 252(b).

First Edition – March, 1948
Second Edition – June, 1953
Third Edition – May, 1973
Fourth Edition – July, 1979
Fifth Edition – June, 1993
Sixth Edition – September, 1997
Seventh Edition – January, 2005

Eighth Edition

October 8, 2010

This ANSI/UL Standard for Safety consists of the Eighth Edition including revisions through February 11, 2015.

The most recent designation of ANSI/UL 404 as an American National Standard (ANSI) occurred on February 11, 2015. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, or effective date information.

The Department of Defense (DoD) has adopted UL 404 on October 3, 1994. The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at http://csds.ul.com.

No Text on This Page

CONTENTS

INTRODUCTION

CONSTRUCTION

PERFORMANCE

MARKING

INTRODUCTION

1 Scope

1.1 These requirements cover indicating pressure gauges of the elastic element type usually employed in the high-pressure side of regulators or reducing valves used on compressed gas containers or cylinders of oxygen, hydrogen, nitrogen, and other gases. Such gauges usually have pressure ranges of 0 – 1500, 0 – 2000, 0 – 3000, 0 – 4000, 0 – 5000, or 0 – 6000 pounds per square inch (psi) (0 – 10.34, 0 – 13.78, 0 – 20.68, 0 – 27.56, 0 – 34.47, or 0 – 41.36 MPa).

2 Components

2.1 Except as indicated in 2.2, a component of a product covered by this standard shall comply with the requirements for that component.

2.2 A component is not required to comply with a specific requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or

b) Is superseded by a requirement in this standard.

2.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

3 Units of Measurement

3.1 If a value for measurement is followed by a value in other units in parentheses, the first stated value is the requirement.

3.2 Unless otherwise indicated, all voltage and current values mentioned in this standard are root-mean-square (rms).

4 Undated References

4.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

CONSTRUCTION

5 General

5.1 The assembly and design of pressure gauges with regard to location of pressure connections, type of pressure connections, size of pressure connections, stop pins, outside diameters of shells and rings, outside diameters of cases, dial figures, graduations, and indicating pointers shall conform to the requirements for gauges in the Standard for Gauges – Pressure Indicating Dial Type – Elastic Element, ANSI/ASME B40.1-91.

5.2 In addition to the foregoing, the following requirements for original calibration and accuracy, and calibration and accuracy following subjection to over-pressures and extended operation, as well as hazards attendant to bursting tests, shall apply.

6 Sizes

6.1 The nominal size of a gauge shall be the inside diameter of the case in inches measured at the face of the dial.

6.2 The size of a gauge shall be not less than 1-1/4 inches (31.75 mm).

7 Dials and Pointers

7.1 A dial shall be produced in a manner which will result in the dial having sharp lines for graduations and numerals. Methods found suitable include silvering and lacquering, etching and filling, photographic, and lithographic processes.

7.2 A pointer used on a resettable gauge provided with a removable lens so that it can be reset by the user shall be so mounted on its staff as to provide for subsequent resetting without damage to the staff or pointer.

7.2 revised February 11, 2015